REMARKS

The present application had claims 18-21 pending. Applicant has amended claims 18 and 21. Thus, claims 18-21 are currently pending. Applicants request that the pending claims be reconsidered.

Drawings

The Examiner advises that since the sequence listings will be published as part of the patent, and in order to reduce redundancy, any Figures which consist only of nucleic acid or protein sequences that have been submitted as sequence listings should be deleted. The Examiner specifically suggested the deletion of Figures 1, 2, 3b, 4b, 5b, 6b, 9b, 10b, and 11b. Applicant has amended the drawings to delete the listed Figures. No new matter has been added by the amendments. Further, Applicant has renumbered the remaining Figures as indicated in the Amendments to Drawings section of this Response. Also, Applicant has amended the specification to remove references to the Figures which have been deleted from the application and update the Figure numbers for the remaining Figures which have been renumbered. Accordingly, Applicants respectfully request that the objection be reconsidered and withdrawn.

Title

The Examiner states that the title of the invention is not descriptive. Applicant has amended the title of the invention to that suggested by the Examiner. Accordingly, Applicants respectfully request that the objection be reconsidered and withdrawn.

Rejections under 35 U.S.C. § 101

The Examiner rejected claims 18-21 under 35 U.S.C. § 101 because the claimed invention allegedly is not supported by a specific, substantial, and credible asserted utility or a well established utility. Applicant directs Examiner's attention to pages 27-28 and page 33, lines 3-6, which identify the homology to known Arrestin. Applicant directs Examiner's attention to Examples 2-5 on pages 42-45 of the specification as originally filed. Within those positions in the specification, and within the references cited therein, Applicant asserts specific and substantial utility for the claimed invention, and the well-established utility thereof. Examiner correctly states that SEQ ID NO 2 has homology to known Arrestins. Based upon Applicant's disclosure and the Examiner's search, there is no reason to doubt the assertion that SEQ ID NO 2 encodes Arrestin. Further, Arrestins have a well-established use in biology based upon the protein's ability to participate in the olfaction cascade.

In paragraph 16, the Examiner states that the asserted utility is not substantial. However, to be substantial, a utility needs only to define a "real world" use. M.P.E.P. § 2107.01. Here, the claimed polypeptide has homology to a known and well-established class of proteins, and the claimed polypeptide may be used in an assay to identify compounds which interfere with the olfaction cascade. It is noteworthy that the Examiner acknowledges in paragraph 12, second sentence, that the asserted utility is credible. Per M.P.E.P. § 2107.01 III, "if the asserted utility is credible, there is no basis to challenge such a claim on the basis that it lacks utility under 35 U.S.C. 101." Further, since a reasonable correlation between the activity in question and the asserted utility exists, no further confirmation of the properties of the protein or conclusive evidence of operativeness are necessary to meet the threshold of utility. See M.P.E.P. § 2107.03 and § 2107.01

9

III and cases cited therein. Accordingly, there is a well-established utility associated with the claimed invention. Thus, Applicant respectfully requests that the rejection be reconsidered and withdrawn.

Rejections under 35 U.S.C. § 112

The Examiner rejected claims 18-21 under 35 U.S.C. § 112, first paragraph. Applicant has amended claims 18 and 21. No new matter has been added by the amendments. Support for the amendments is found at least on page 30 of the specification. Applicant has amended claims 18 and 21 to further clarify the claim scope. With reference to paragraph 18 of the Office Action, Applicant believes the claimed invention is supported by a well established utility for the reasons set forth above. With reference to paragraphs 19-28 of the Office Action, Examiner's previous interpretation of the scope of claims 18-21 was overly broad. Applicant, as noted in the currently amended claims, is claiming "an amino acid sequence of which comprises at least 40 consecutive residues of SEQ ID NO: 2." Stated another way, such claim language includes any polypeptide having at least 40 consecutive residues of SEQ ID NO: 2. Such claim language does not include "any polypeptide that is at least 20 residues long and comprises as few as one amino acid residue of SEQ ID NO: 2" as suggested by the Examiner in paragraph 20. Such an interpretation would include any polypeptide that is at least 20 residues long and includes any one of the amino acids present in SEQ ID NO:2. Applicant believes that the Examiner's overly broad interpretation of the claims resulted in an overly broad claim scope which resulted in rejections under 35 U.S.C. § 112, first paragraph. Applicant believes that the specification supports the currently pending claims. Accordingly, Applicant respectfully requests that the rejections be reconsidered and withdrawn.

With reference to paragraphs 22-28 of the Office Action, the current specification certainly provides a disclosure that would allow the skilled artisan to practice the claimed invention without undue experimentation and provides a written description of the claimed invention. Applicants direct the Examiner's attention to pages 24-32 of the specification, in addition to the remainder of the specification, to obtain information regarding how to make and use the currently claimed invention, as currently amended. Further, specific guidance with regard to conservatively modified amino acids is provided on pages 30 and 31. Accordingly, Applicant respectfully requests that the rejections be reconsidered and withdrawn.

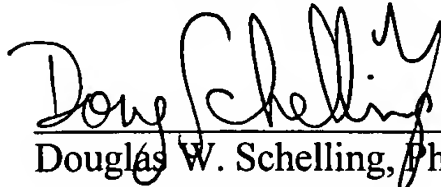<div align="center">Rejections under 35 U.S.C. § 102(b)</div>

The Examiner rejected claims 18 and 21 under 35 U.S.C. § 102(b) as allegedly being anticipated by Hyde et al. Applicants have amended claims 18 and 21. No new matter has been added by the amendment. Support for the amendment is found at least on page 30 of the specification. Pursuant to M.P.E.P. § 2131, and case law therein, a claim is anticipated when each and every element of the claim is found in a single prior art reference. Hyde et al. does not provide all of the limitations of the amended claims. Thus, Applicant respectfully requests that the rejections be reconsidered and withdrawn.

Applicant has merely commented upon certain aspects of the invention and reserve the right to provide further comments as necessary. Applicant notes that these remarks should not create limitations to the claims and that the claim language itself should be considered.

Should the Examiner feel that a telephone conference with Applicant's attorney would advance the prosecution of the application, he is invited to call the undersigned at 901-537-1049.

The Commissioner is authorized to charge any deficiency or credit any overpayment associated with the filing of this Response to Deposit Account 502346.

Respectfully submitted,

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Should additional fees be necessary in connection with the filing of this paper, or any future papers, or if a petition for extension of time is required for timely acceptance of same, the Commissioner is hereby authorized to charge Deposit Account No 502346 for any such fees; and applicant hereby petitions for any needed extension of time.
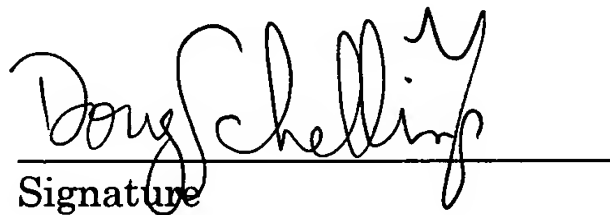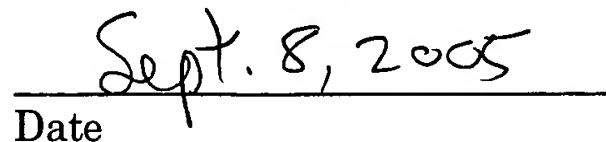
CERTIFICATE OF FIRST CLASS MAILING

I hereby certify that this Response and Amendment, including Certificate of First Class Mailing (13 pages), Extension of time to reply (2 pages, one original and one copy), Replacement and Annotated Drawings (37 pages) and a self addressed return post card are being deposited with the United States Postal Service, postage prepaid, as first class mail in an envelope addressed to:

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Douglas W. Schelling

_____
Signature

_____
Date   Sept. 8, 2005

Amendments to the Drawings:

The attached sheets of drawings include the deletion of several Figures and the renumbering of the remaining Figures. These sheets replace the original sheets including Figures 1-11. Figures 1, 2, 3b, 4b, 5b, 6b, 9b, 10b, and 11b have been deleted. The remaining Figures have been renumbered as follows: 3a to 1, 4a to 2, 5a to 3, 6a to 4, 7 to 5, 8 to 6, 9a to 7, 10a to 8, and 11a to 9. Regarding previous Figure 8, renumbered as Figure 6, the right hand column providing references to the deleted Figures has been removed.

Attachment: Replacement Sheet

                    Annotated Sheet showing changes

Figure 1 ~ Renumber figure

Anopheles gambiae odorant receptor 1 genomic sequence (SEQ ID NO: 9)

5

Features:
1) Presumed Untranslated 5' and 3' regions are underlined.
2) Potential TATA box transcription initiation signal is double underlined.
10 3) Putative Start (ATG) and Stop (TAA) codons are in BOLD.
4) Introns are tentatively assigned and are shown in lower case.
Exons are highlighted.

15 AGCTTTGTTCATTTATGTTGAAATCTAGCCCATTTTGTATAGTGCTGAACGACGAAGAACATACGAAAGTACCTCGT
CCGAACACTATCAACATTAATTATACCAAGCTAGAAGAAGATATTTATAGTCAAGCCTCAACATCATAGGAAACTTT
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25 AATTAGTTTCCAATTGTCCACGGAAAACCCaCAAAAGAAAAAAAAACTTGTATCTAGGGTGGAATTTTTCGAGAACA
ATTGGACACTTCAT**ATGAAAAACGGACAGCTTTTTCAAAATGTTAAATAAACACCGTTGGATCCTTT**gttggatttca
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caaattgaaatacaataaagtccctgaatttttattcgaataacggcttgaactcatttatttcaaaaacctttgaga
30 aattcctcgttgaaaattggtctcctatagttctgctaacgggccacttcaaaagcaagaactaacaaaatcataat
tatggtgcaagtaactatcagtaccagtaatcgccattaaaaacttttcctcaatttgcggctcgttaccggctaaa
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catcatttgagtttcatcttcgaggagaaatagatcagtgccactgtttaaccgaaagtaatgaagctgaacaaact
35 gaacccacggtgggatgcgtacgatcgacgggattcgttctggttgcagttgctttgtttgaaatatttag**GCCTAT**
GCCCACCGCAACATACCGATCAGCCAACCCGCAACCCGTACATCCCGTACCGTTCGCGCTTTGCGGATCATCGTTTCTA
CATCTGTACGGCTCTAACCGCAACCCCTATACTTCAAGgATGTGCAACGATATTAATgtgagtctctagttagctattag
tgttccacctgtccataatctgtcttttattgggtag**CACAATCGCAAAATGCATTGTTCGTGCTTATGACTCAAGTGA**
CGTTGATCTACAAGCTGGAAAAGTTTAACTACAACATCGGACGGATTCACGCTTGTCTCGCCAACGTTAACTGCACA
40 **CTGTATCAGCCCAAACAGCGCCAAGAATTCAG**gtaagcctgctgggaaatatgactaaaaagagtgctaacaaacga
ctctcctccaaatgtag**GCCCGTTTTACAATCGATGAGTGGAGTGTTTTGGCTGATGATCTTTCTCATGTTTGTGGC**
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45 **TATGGTTAAAAAG**gtgagttacggcgactacttgcctccagtaaggacagggagtttgtttccgttatgatatcatt
ttatcag**CTTGGACATGACGTCCTCCCGAACGGCCAATTGGTCGCAACGGCATGGCGGAATCCAAACAGATCGGAAAGC**
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TTTTCTGTTACCGTAGCCAATCGAAATCTCCTATACCgtaggttggacacgtagaggaattaaatgtttgggaagaata
tcaataccaaatagtatgatgtttcgttacag**ACGGATAAATTTACAGAGTTTGTTGGCTTTTCCAACTACTTCAAG**
TTCGATAAGCCGTACCAGCCCAAGCAATGATATTTTTTTCTGCAAATgtgagatagcggtgtatttgtgcagtcagtaca

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     caatctgttttgtagATTATGAAGCTATCGTACTCCTATCTGGCCGTACTTCAGAGCATGGAATCAGAGTAATGGTC
     CTAATATCCCTAATGTTGAAATTATATTTTGTTAGATTTATTGCATAAAGTAaTaTTTAATTTTATACATCAAACGT
  5  AAGCCCGCtaGTTTTCAATTAGCCTTTTCCAAAATTTATCAAATTGATTTCGAATTGATTGCAGAGTTTCAGGAATT
     TAATCTGATAGGATATCTTGTTTATCCAATAGAGGTGTGGAAGCGTTCCCAAGCCATTCGTTTGATAGTTTATAGCA
     CCGTCGAGCAGTTGATCGCTGTGATCGCTAGGCGCACCTGATTTTATCTTTATCTCGCACCTGTTATGGCAAGGGCG
     CTTTTCACACGTTTCACACAATATAATGCACATGTATAATGCATTCTTACTTTAGCATTTTTGTTACATATAATACC
     AAAATTATGCATTTTTATTCTCACGCAACGATTAGAGGATGACTTcACAAAGGTCCATCTAGTGGTAGGAGGTATAC
 10  AATTATACCTCTCAAAATCTCACAGCAtAATGAGAAACAAAAGGATACCAAGCATACCCTTTTTTACTTGACAATT
     TCATTTGATTTATGTAATAAAGCACTGCaCGTCGACTTCCTAAAA
```

Figure 1 continued

Renumber Figure

2

Figure 2 — Renumber figure

Anopheles gambiae odorant receptor 2 genomic sequence (SEQ ID NO: 10)

Features:
1) Presumed Untranslated 5' and 3' regions are underlined.
2) Potential TATA box transcription initiation signal is double underlined.
3) Putative Start (ATG) and Stop (TAA) codons are in BOLD.
4) Introns are tentatively assigned and are shown in lower case.
5) Exons are highlighted.

```
GGGATCCTCTAGAGTCGACCTGCAGGCATGCAAGCTTCCCTCACCGTGACGTGCTAGAAATGGTTCAACATACTCGT
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ATCGAAAATTTGCCATTCAGGGTAAAGTTGCTCGTGGACGGATCCCCCGGGCTGCAGGAATTCGATATCAAGCTTAT
CGATACCGTCGACCTCGAGGGGGGGCCCGGTACCCAGCTTTTGTTCCCTTTAGTGGA
```

Figure 2 continued

Renumber figure

Figure (3) — Renumber figure

Anopheles gambiae odorant receptor 3 genomic sequence (SEQ ID NO: 11)

5

Features:
1) Presumed Untranslated 5' and 3' regions are underlined.
2) Putative Start (ATG) and Stop (TAA) codons are in BOLD.
3) Introns are tentatively assigned and are shown in lower case.
10 4) Exons are highlighted.

```
AAGCAGAACACATCAAGAAGCAATTAGGTGTGTCGTACGTTAGCAAGTAGTTCGCGAGGAGGAATAAAATAGATGCC
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GGGGAAAAACACGGGAGCAAAACGAGAACAGAACGCAGTAAACAACAAAACCGGCCGGAACAACAACGGTGCCGGAA
ACGA
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40

Figure 4 — Renumber figure?

Anopheles gambiae odorant receptor 4 genomic sequence (SEQ ID NO: 12)

5

Features:
1) Putative Start (ATG) and Stop (TAA) codons are in BOLD.
2) Introns are tentatively assigned and are shown in lower case.

10   GGGGAACTCCCCCACCCGACCAGACGACGGAAAGCTAACGATGTGCAATTGAATAGTCATTAGT
AGCGTTTTTGCTCGCAAACGAACTAACCCTTTGACTTTTTAAGTTCACTACGGTGAGGACAAAAA
TCAATAAATTAAATCGAGACCGTTGATGAGCAAAAGAAAAAAAAATATTTTACTGATTTTCATTT
CGTTCCATCGACTACATAATCATAATTATATGCCACATTTTATTATAAGTTTTTGTATCATTTTTA
AACAACACAAAAATGCATCCTTTCGAATATTAGTCAGGTTGTATCAACAATGAAGTTTGAACTGT
15   TTCAAAAATATTCCTCCCCGGACACGGTCTTATCCTTCGTGCTAAGGCTTTTGCATATCGTGGGC
ATGAATGGGGCAGGATTTCGGTCGCGAATTCGAGTTGGTGGCATTTTTCTGTTCTATTTAATCTT
TCTTGTAATACCGCCACTAACGGGCGGGTACACCGATGGTCACCAGCGTGTACGCACCAGTGTG
GAATTCCTGTTTAATTGCAATATTTACGGCGGCAGTATGTTCTTTGCCTACGATGTGGCCACTTT
CCAAGCGTTCATCCAGGAACTGAAGAGCCTTTCGGTTTTGGgtaatatttaattaattaaaattgcgtttattgcat
20   catcatttgtttctctttgcagTATGCTCACATTCGTACAGACTAAAGTATAAGCTGACCCGGTTCAACCGTC
GAGCGGATATTATCGCCAAAGTGCAAACGACCTGCATGGGTGCTGTAACGCTTTTCTACTGGAT
TGCACCGATACCTTCCATCTGTGCGCACTACTACAGGTCGACCAATTCCACCGAACCCGTGCGG
TTTGTGCAACATTTAGAGGTGAAGTTCTATTGGCTCGAGAATCGCACCTCAGTCGAGGACTACAT
AACCTTCGTGCTGATCATGCTACCCGTCGTGGTTATGTGTGGTTACGTATGCAATTTGAAGGTGA
25   TGACCATCTGCTGCAGCATTGGACACTGTACACTGTACACCAGGATGACTATAGAGATGGTAGA
GCAGTTGGAAAGCATGGCATCAGCGGAACGAACTGCCAGCGCCATACGCAACGTGGGGCAGAT
GCACAGTGGTTTACTGAAATGCATTAGGCTTTTGAACACGTCAATCCGATCGATGCTGATGCTGC
AGTGGTTGACCTGCGTGTTAAACTGGAGCATTTCTCTCATCTATCTAACGAACGTGgttagttttgtctt
gtttggaaatccaaaaacaaaaagatggctataattgaactttctattacagGGCATCTCGCTACAATCGGTTACCGTGGT
30   GGTAATGTTTTTTCTTGCCACTGCGGAAACTTTCCTGTATTGTTTACTTGGGACGCGGCTTGCGA
CACAACAGCAGCTGCTGGAGCACGCACTCTATGCTACACGGTGGTACAACTACCCAATAGCCTT
TCGCAGCAGCATTAGGATGATGTTGAGACAGTCGCAAAGGCATGCACACATAACGGTGGGGAAG
TTTTTTCGCGTTAATTTGGAAGAATTTAGCAGGATTGTCAACTTATCCTACTCTGCTTACGTCGT
ACTTAAGGATGTAATAAAGATGGATGTACAGTGAATGTTTTTTTTTTGGCTTGGCAACGAATGA
35   AGTTTTCCGAATCTATATTAGATCTAGAATTTAATCTAGATGTCATAATATGATCTTGGCCATGA
CCGGTTCCTGGTTTTGGAACCAATTCTCAAAACAATTTTGAACTTAGGGCGAGGCATGAAATGTC
CCAAGAACCTATCCAAGTTCTGGAACTACATATTACCGAATCTATCCCATTATTGCCTCGGAACT
GGTTTGGTGCTAAATATTTGTCCAAATGTTGGTCCTGGACCTATCCAGACAAAGATCTTCAATTA
TTCCTACCACTGGAACTGATTAATTGATGTAGGAAGTCATGGAGGTGTTCAGGGAGAATTTAAA
40   CACTAATGTTCCAACTCATTATTTCAAGGGCAATTCTATTTTTTATATGCCCCTACGGATTGATAC
GTATGTATTACTCCATTTCCTGGACTTTGTCTTATTCTTGCTGCTGATTGGACGTGAAATGTTGA
GAAAAAGATTCTTATTTATGAGTGATACAGAGCCTTTAAATACTCCTACGTTGTTTGCTATTTAA
GTATGGCCAGGCTAATCACAATCGCTACTAATGAACAGAATCTCTTCTAATTAAACCCTTTCGAT
TGATAGTGTCAATGTCAATGTCGAGATAATTGAACTGCAAACgATACCTACCTTAAACGGAGCAG
45   AACACATCAAGAAGCAATTAGGTGTGTCGTACGTTAGCAAGTAGTTCGCGAGGAGGAATAAAAT
AG

50

Figure (5) - Renumber figure

ANOPHELES GAMBIAE

Preferred DNA Codons

Amino Acids			Preferred Codons					
Alanine	Ala	A	GCC	GCG	GCT	GCA		
Cysteine	Cys	C	TGC	TGT				
Aspartic acid	Asp	D	GAC	GAT				
Glutamic acid	Glu	E	GAG	GAA				
Phenylalanine	Phe	F	TTC	TTT				
Glycine	Gly	G	GGC	GGT	GGA	GGG		
Histidine	His	H	CAC	CAT				
Isoleucine	Ile	I	ATC	ATT	ATA			
Lysine	Lys	K	AAG	AAA				
Leucine	Leu	L	CTG	CTC	TTG	CTT	CTA	TTA
Methionine	Met	M	ATG					
Asparagine	Asn	N	AAC	AAT				
Proline	Pro	P	CCG	CCC	CCA	CCT		
Glutamine	Gln	Q	CAG	CAA				
Arginine	Arg	R	CGC	CGG	CGT	CGA	AGA	AGG
Serine	Ser	S	TCG	AGC	TCC	AGT	TCT	TCA
Threonine	Thr	T	ACG	ACC	ACT	ACA		
Valine	Val	V	GTG	GTC	GTT	GTA		
Tryptophan	Trp	W	TGG					
Tyrosine	Tyr	Y	TAC	TAT				

5

http://www.kazusa.or.jp/codon/cgi-
bin/showcodon.cgi?species=Anopheles+gambiae+[gbinv]

Figure 6 — *Renumber figure.*
Delete column

Name	SEQ ID NO
Arrestin 1 (cDNA)	SEQ ID NO: 1
Arrestin 1 (polypeptide)	SEQ ID NO: 2
Odorant Receptor 1 (cDNA)	SEQ ID NO: 3
Odorant Receptor 1 (polypeptide)	SEQ ID NO: 4
Odorant Receptor 2 (cDNA)	SEQ ID NO: 5
Odorant Receptor 2 (polypeptide)	SEQ ID NO: 6
Odorant Receptor 3 (cDNA)	SEQ ID NO: 7
Odorant Receptor 3 (polypeptide)	SEQ ID NO: 8
Odorant Receptor 4 (cDNA)	SEQ ID NO: 13
Odorant Receptor 4 (polypeptide)	SEQ ID NO: 14
Odorant Receptor 5 (cDNA)	SEQ ID NO: 15
Odorant Receptor 5 (polypeptide)	SEQ ID NO: 16
Odorant Receptor 6 (cDNA)	SEQ ID NO: 17
Odorant Receptor 6 (polypeptide)	SEQ ID NO: 18
Odorant Receptor 7 (cDNA)	SEQ ID NO: 19
Odorant Receptor 7 (polypeptide)	SEQ ID NO: 20

Figure 7 — *Renumber figure*

Anopheles gambiae odorant receptor 5 genomic sequence (SEQ ID NO: 21)

5

Predicted Exons: *ITALICIZED*, <u>UNDERLINED</u> AND HIGHLIGHTED.
Introns: lowercase.

10 tctagacttgaacccatgacgggcattttattgagtcgttcgagttgacgactgtaccacgggaccacccgtttatcactatcactatt
aattaattataatatgcttttgtagcgatcagcctaccgggttttgtttctctggatatcttaagttcccatttgattatcaagatagaa
caacaacttgtaccttaaataatcattacgtacccttaatcaacctgtgcatcaaggagttttcgcgaaagcaaaaatccgattgtct
gatgttgtcttgattccatccgattcgttactggttctgcaaaatcgtccaataatacggcaatgtccttatcgatgcttgaatcaacat
cacattgtttgcatttcgttttttgcgtgcaaatatgttatttgcaaagaaggcaaggtaatgtgcttaagagtaaatacaattcgctg
15 tccattttttgtccaccagtgtgccagaacccgtgccttttagtccttcgaatacatccgaccagtcagcaagcaagtgcatc*ATGG*
TGCTACCGAAGCTGTCCGAACCGTACGCCGTGATGCCGCTTCTACTACGCCTGCAGCG
TTTCGTTGGGCTGTGGGGTGAACGACGCTATCGCTACAAGTTCCGGTTGGCATTTTTA
AGCTTCTGTCTGCTAGTAGTTATTCCGAAGGTTGCCTTCGGCTATCCAGATTTAGAGAC
AATGGTTCGCGGAACAGCTGAGCTGATTTTCGAATGGAACGTACTGTTTGGGATGTTG
20 *CTGTTTTCTCTCAAGCTAGACGACTATGATGATCTGGTGTACCGGTACAAGGACATATC*
*AAAGATTG*gtgcgtgataatgattgataaaaggaacctttgagcaactcctatcctttcaag*CTTTCCGTAAGGAC*
GTTCCCTCGCAGATGGGCGACTATCTGGTACGCATCAATCATCGTATCGATCGGTTTTC
CAAGATCTACTGCTGCAGCCATCTGTGTTTGGCCATCTTCTACTGGGTGGCTCCTTCGT
CCAGCACCTACCTAGCGTACCTGGGGGCACGAAACAGATCCGTCCCGGTCGAACATGT
25 *GCTACACCTGGAGGAGGAGCTGTACTGGTTTCACACCCGCGTCTCGCTGGTAGATTAC*
TCCATATTCACCGCCATCATGCTGCCTACAATCTTTATGCTAGCGTACTTCGGTGGACT
AAAGCTGCTAACCATCTTCAGCAACGTGAAGTACTGTTCGGCAATGCTCAGGCTTGTG
GCGATGAGAATCCAGTTCATGGACCGGCTGGACGAGCGCGAAGCGGAAAAGGAACTGA
*TCGAAATCATCGTCATGCATCAGAAGGCGCTAA*gtaaggtctgccggtatgttgtggatagaatacattt
30 ctagctgctttcag*ATGTGTGGAGCTGTTGGAAATCATCTTTCGGTGGGTTTTTCTGGGACAG*
*TTCATACAGTGCGTAATGATCTGGTGCAGCTTGGTTCTGTACGTCGCCGTTACG*gtaacta
aaagcactgtagtgatctgtctgccacaccattcactgctgtgtcttgttttgtcactcttcccag*GGTCTCAGCACAAAAG*
CGGCAAACGTGGGTGTACTGTTTATACTGCTAACAGTGGAAACCTACGGATTCTGCTA
*CTTTGGCAGTGATCTTACCTCGGAGGCAAGTTGTTATTCGCTGA*gtttcagttacttttccgttcccc
35 tctaaccgtaccacttgtaccatttgtttgagacagagcttgagcgtag*CACGTGCTGCGTACGGTAGCCTCTGG*
TATCGCCGTTCGGTTTCGATTCAACGGAAGCTTCGAATGGTACTGCAGCGTGCCCAGA
AACCGGTCGGCATCTCGGCTGGGAAGTTTTGCTTCGTCGACATTGAGCAGTTTGGCAA
*T*gtatggggagaccttccactgtggcaagaaagattttctttattaatgcatctttaatttacag*ATGGCAAAAACATCA*
*TACTCGTTCTACATCGTTCTGAAGGATCAATTTTAA*aggggaactcccccacccgaccagacgacggaa
40 agctaacgatgtgcaattgaatagtcattagtagcgttttgctcgcaaacgaactaacccttgactttttaagttcactacggtgag
gacaaaaatcaataaattaaatcgagaccgttgatgagcaaaagaaaaaaaaatattttactgattttcatttcgttccatcgacta
cataatcataattatatgccacattttattataagtttttg

Figure 8 _Renumber figure_

Anopheles gambiae odorant receptor 6 partial genomic sequence (SEQ ID NO: 22)

5   These are the predicted last three exons of another candidate *Anopheles gambiae* odorant receptor.

Predicted Exons: *ITALICIZED*, <u>UNDERLINED</u> AND HIGHLIGHTED. Introns: lowercase.

10

aacacccatcttatcggcaaaattagtatttaccgtttgaaagcggcttcccttcctggctgtttctcactctctctctctctgtctctctta
ttgatgccgtatgcgccgcgtgctataggctag*TTATGCTTACCGGATGTTGCGATCGCGCACGTGCTTT*
TCCGCATACGCCAGTGCACACTTGATGGCGGTGGTGATGACGTCTGCTGCGCACCGTT
15   *TTCTGCTCGTGAGTCAGACCTTTTCATTTCCTGCAATATCCTGTTTCTTTCCCGACCCC*
ACAGACGGTTAGACGGATATATGCTGGTAAAGTTTGTCCTCTTCATGCTGTGCTTTCTG
*ATCGAGCTGCTGATGCTGTGTGCGTACGGTGAGGATATTGTGGAATCG*gtaaggcaccaggc
ggtgatgagcgagtcgcgagtaattgaagcttttgcttttaaaacacatcagag*CCTTGGGGTGATTGATGCCGCT*
TACGGTTGCGAATGGTACCGGGAAGGGTCGGTGGCGTTCCATCGATCCGTGCTGCAAA
20   *TTATACACCGCAGCCAGCAGTCCGTCATACTGACCGCATGGAAAATTTGGCCCATCCAA*
*ATGAGTACTTTCAGTCAG*gtgagttgccaattgattgccgtttgcgttaatatttcagtaagagtgcgctctttcccttag
*ATCCTGCAAGCTTCCTGGTCCTACTTTACCCTCCTGAAGACCGTCTACGGGAATAA*gtaa
gcgcgagagagagagagagagcagtatcgttcaccctttggatgaatcaatagatttctaatcatgaaccattgaaaaatgaatca
acatttcgctagttgcacaatattgtaccattctatacagcttcaccacgaccaagcgtttgttgcatcaggaccaaacacgtttcga
25   caagccgcgtcacctgctggc

Figure 9 *Renumber figure*

Anopheles gambiae odorant receptor 7 genomic sequence (SEQ ID NO: 23)

5

Features

1. Predicted Exons (7): ALL CAPS, ITALICIZED, UNDERLINED, HIGHLIGHTED

2. Introns (6): lowercase

10   3. 5' and 3' sequences: lowercase, dotted underlined


```
ccgcccgggcaggtgacttacgcggtctgacttgctggtgcgctgctttgtacggcaaacggctacacaagcgaatcgaattattttcc
tatcacgctgcgcttaccagcgcctgctggtaggcaaagaatgtgcaaagtttcatttggcttggttcgtctgctttgctgtgaacgtgt
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15
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gcacggttgcatcgctaaggtttcggtgtgagccgagaagttgcagatcgaaatctctttgtgtgtgtgtgtgtgtgcagtgggaa
gcattgtgtttagtgagaagtgaaaagaaaagtgctgaaaaatgcaagtccagccgaccaagtacgtcggccttcgttgccgacct
gatgccgaacattcgggttgatgcaggccagcggtcaactttctgttccggctacgtcaccggcccgatactgatccgcaaggtgtac
tcctggtggacgctcgcccATGGTGCTGATCCAGTTCTTCGCCATCCTCGGCAACCTGGCGACGA
ACGCGGACGACGTGAACGAGCTGACCGCCAACACGATCACGACCCTGTTCTTCACGCA
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20
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CTCGGTCACCAAGTTCATCTACTTTGCGGTCAACTCGGAGAACTTCTACCGGACGCTC
GCCATCTGGAACCAGACCAACACGCACCCGCTGTTTGCCGAATCGGACGCCCGGTACC
ATTCGATTGCCGCTCGCCAAGATGCGGAAGCTGCTGGTGCTGGTGATGGCCACCACCGT
CCTGTCGGTTGTCGgtatgtgtgtatgtgtgtggccgtttgggaaagtgtctttgcggcagaaccccaatctactgttacgc
ttgactgggtttttgtttttttctcggtggagggacgggataaaatatctgaaagaataattgagtcaacccacaggggggatgcaag
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25
```
acatcgcaggcagagagtttgggtttgatttatcaccgcacaccgaatatcttcacggttcataagcttcaccgcggtgaaaaggga
actccccatttccctgtttttctttttttttcttcctctcgataaaattactcatcgcttttcgttttttttttttttgttgttgcttctttcttctttcatc
cctactagCCTGGGTTACGATAACATTTTTCGGCGAGAGCGTCAAGACTGTGCTCGATAAG
GCAACCAACGAGACGTACACGGTGGATATACCCCGGCTGCCCATCAAGTCCTGGTATC
CGTGGAATGCAATGAGCGGACCGGCGTACATTTTCTCTTTCATCTACCAGGTACGTTG
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30
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GCGGAATgtcctgcgcgtcacagttggcagtcagtgagcggcaacacggcgaaaaaatgggactaaaaccggtcttcacaga
gccaacacattcctacagcaattgcataccttcgggcggtcgggactgggcaatgcagctacaacatcctcgcctaaagttatgcaat
tcgagcgacaaatgttgccgtgttagggcttttttgtgataatagtcgttttttttgtcctctcgcttatcaaactctatcaacggaggaaa
tccatttcgctacaatgcctacagctcaagtttcaaggtcaatcgagcgggtggggatcaactttttttattcattttgctaacgcccca
tcaacaaattctatgttctcaatggcaaagattactgcccgcaccaatcgcccaacgaaacggcaaaagaaaagcgacgattatga
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35
```
agatgtccaaaccattgcccgcccgacgctttatctgatgatttgcgggatggctttttacttgtctgctactttcaggcacaaaaggaa
atgaaaccagcgcaggctcgtttgccggcttgcggaggttcttcaggcactgaggctgagtacttaaatcgaacgattttacgattc
tggatccagtttatgatgtggcctgcattacagtggcaattataccctgatgttcatttcattgcattttgtaagtttgtgctggtaacg
cccgtaacgattaattcttttcaaagagattctttcaaagagattcaaaatgtgtataacaaatgctaacgaatggaccgtacttgg
agggttgcggaaagtaacgttttaaaatattcatcacaatcctctgcaaacttgtgcttaattaattggtgcacaataagtttaaact
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40
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gtggcggcagatgtgtcgctgtccgcttccttccttcccagcaagctcgtgcgaaataatttattccatcattttaatacagccgtttgtg
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ggacaaatcctccttgctatggtctaaggccagcttcggtaccgcttccgcttcgggatgtcataaagtttgatgggtgtttttaacatt
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45
```
tcggcggcggcctcatccccagttttgcgccaccaatattgccttcattaatctgtaccctcggagcgttagggcccgcggacgagtcct
cgttgtaatgcaccgccatgccacgggacgggataatccgttgggacggcgcgaaagcgactatcgcggacggattggttcgaccg
```

Renumbered figure

```
    tgctacaacacattttatgcttcacagatttacttcctgctgttttcgatggtccagagcaacctcgcggatgtcatgttctgctcctggt
    tgctgctagcctgcgagcagctgcaacacttgaaggtaggtacggtagcaaacgtggttgtctttacatccgcgtgcagcattatcct
    tatcgacgtgtagtgttaacggtaaaagaggaagcgataaaaaagcaacattctctcacaccctcgatctctctttattttctctctct
    ctctctctctctctctctctctctctctctctctctctctctccatctcctcgggcagGGTATTATGCGATCGTTGATG
5   GAGCTTTCGGCCTCGCTGGACACCTACCGGCCCAACTCTTCGCAACTGTTCCGAGCAA
    TTTCAGCCGGTTCCAAATCGGAGCTGATCATCAACGAAGgtatgtgaaacgtgtgctcgtggcagacg
    gactcaaagagagcataacacaatcccctggtagttcatttcaatgaccttaacactcggcaagctaagcgagacagtggggacag
    tgagaaagagagaacaagaaaaaaaaccatcatccgtacgacatcatcgctacgtaccggtatttcaggatgaggaaataaaac
    gctaggggaatgaaagtgcgacagaatgataaaacaatccccacccaggcccccagcctggacgaacggatgtagtgtgcgaagc
10  gagcaaaaaaagtcaaataaattgaagtttaaaaatagattttccccgtccatccgtggtggagcgtaaagcccggcggacaactt
    cgagcacggcgaccgtgcacagtactgtgccacagttgtagggacggataagctccgttcctttttttatcctttttttttggagatttgt
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    acgcccgtggtgcccaaagcgcaacgcgaattgcatgttaacaaacctttgcctaccatccaatccgtgtgaaattgcccgctctcttt
15  ctctcttttgcgctttcggtgtatcgaacggtttttgtccctttttttttactttgctcttgatctcttgctgtgctcactttcatctcatgtttttgc
    ctgacggtggtgggttttcgaaaaaagagcgatttcttctgcgtgtgtgtgtggttttttttaaataaccgctccaggtcgtgttgaacg
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    cttaagtccaatgtaatttaccgtgtttctgtcgttcgtcaccttcttcgtcgatggagattggtgcggttggcacgataaaagcccact
    gcacgttacggaccgagggaaaggtctttttgtaggcctagcaacggtcctcattcaccgcatgggggtgtagctcagatggtagag
20  cgctcgcttagcatgtgagaggtaccgggatcgatacccggcatctccaacccacacaaaacgttttttaagaagatttttaggggaa
    gatattaacgcgggtacactgtgctcctctaagttggaagagtagatgagatgatgacaagggagaaggaacatgtgtacgtgttt
    gatagcaaacacacaaacaacaatatcatctctgataataatctgatgtgtgatgtgtgtgtattgttgttatgctgcctttgccatct
    tgtccctctctctcctgttcaactcctaaaagaattgtttggagtcctctcagttcctcgtaaagatcctttcgagattcttctttccttttt
    attatttattccacgagcctctgacataagtagccttccgcttatttccttctccttgcacttgtcagttccgtgtagagcgtcattttgag
25  gtttacacatttcccaccgacgcctgattgttacattgtcatctacattgctttccgtttaccgttccgcccttttttttttaacgctaccaca
    gAAAAGGATCCGGACGTTAAGGACTTTGATCTGAGCGGCATCTACAGCTCGAAGGCGG
    ACTGGGGCGCCCAGTTCCGTGCGCCGTCGACGCTGCAAAACGTTCGACGAGAATGGCAG
    GAACGGAAATCCGAACGGGCTTACCCGGAAGCAGGAAATGATGGTGCGCAGCGCCATC
    AAGTACTGGGTCGAGCGGCACAAGCACGTTGTACGgtaggtatggtaatttctaaggtgtggtgtaaag
30  cctccaggttccatgaaaaagggatactttaccacagtaagagtttgtttttgctggacttacattctttggagcattgtttggtgttgtg
    ctgaaaccggttgcaatatcgttttgcgaagaaattatgtgtaaagcgtattacaatctcattcctctgttaatctgtaccaattgtgtc
    agccccgaccgaaagcaggcctaattcgtaccagaaaaaccacaagctgtttgtaagcatcgatacgcccgaagctttcaatccagc
    caaggcgccacctactattgacgtgactttttgcacgttcacactctccctctcccattctttctataaccaatcgtcgctcagccagcat
    cgcccggagtgaagtttttatttgaacgatatcacccgtatcgattttccactaaacatgcttaaatcgtttcacaaagctcccccaaa
35  atcccatttcaccaatccaccaatttgaagtccgtcgtcctttgtgtccttgtgtttgtgtgtttgtgtgagctggagacatggggggagt
    gagtaaccgaacaacctcttgccgctgcttcacgatatcgaacagcaccaagataagcatcccttttttccctagccgatgtctccgata
    tctcgattccgcttccagcgaggcaaagaaaaaggcgaactggctgacctcacccggggcgaggaaaaagcgtagggattacgtc
    gagcagcacgagttgtgatttcttcttcttctggttccataaatcgctgacggtttccattaccgcctgcggagtgcacacacgtgaag
    ggaaagcgaaaacgtttagattccagcagcaacggcagcaccagaagcagcagcagcgcggcaaattgaatcatcctgacgcgat
40  gagttgtctgggttttcgggtcggtggcttacagcaccacaccatctgctgcagctaatacagctgtaaatttcgttagacatagactt
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    gagccgtgttgctgctggttgcgatacggatcacgtccgattcgattcagcctgcgtgtttttggtgaagatccttatcggtgacccact
    ttcagtgtgtcgagagcgagggtcactatggcgcctgtcagttggaaagctaggctcgattcaaagggccattgtgccagtgttcttt
    ttaagatagcgataagcttttgatcgaaatagtaaatcaaacattgtttcttttttcctattccaaactgttgccaacctcattattacg
45  tttttgcagcgggtgtatagtaaattgcatactttaaggcgtgattttcaaatgtagcgttccgtatgcagaaacgccatggattatgc
    aatttaaacaatgctgcttccttaacattcaaataacggcttattaaggaacttttgtgcaatttgttttaacagcaaatagtttagc
    tcagaacgatcacatttagtatcgcttcaacaaagaactcttttaaacacacaatttgtaatgccattccctcgagaaagtttcttgtc
    agtcctcctctgcatcacagcaacaaccaaaacctgctcatgtttcctgctcgtttcctagctgttttgaacgttatttccgattcctgtgct
```

12

Renumbered figure

tgcccgcttttcttacaatcaaccacaatggttcagatttcgctcttattttattgacccactgctttcgtgctgaagcccgtggaaacaa

tgcgccaagctcagcatccagccatgcatgtaaaatgagccacgcgacagattttagacatcgctttcgctctgcaccggaggtggtt

ttattcttgtttccgattcccacgtccattcgtcctgggtccgtccgccgggcccgaaaccgtaagccgtgcggggaattacgcaatcga

aacgagccagaaaatgagcacgccaaatgcaaagaaaatccccttttgagtggtgctcctgccaccactcatctccccaactggtgg

5   gtgaaaaaccttgtgcgcccccttctctttccagaaaaaaaacgcctcgctcgcacaaaaacatgctcgcccggtgaagctgcgtatgt

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gtcttttagccgtggatttgaattttctgaatatcacaggcgggcgcggtttgcctgcaaggttgttgcttcccacacgagcattgcttt

ccgtaccgcggtggggcgagttttcaacgcaaccttctacaagcaacgccacaacgcctgggagcgatatttaacagaaacaagaa

10   catcccgaacttcagcacatgccgtgatttgcctgttggaaaagcttttgtgagcgtgtgagttgaacgagctctattttcccagcgat

gggtggcatttgtgtggcatgctatcgtcagcttttcttgaatctttacctctccattcgcctccattagtacacgcgtatggaaaatgg

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15   acagtatgcaatctgtttagctttgttgtttaatgactgcgttggtagtacaatatttatttacaccgcgtaatttatctcacaaattgc

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acaaatcaacctgatgcccgggtccgttggcaaacagcttgcgccgaagccgctcagtgtttcgtgcactaccgtgctgccattttgct

gccctcatcgaacagataaacagaagggcaactcttgtgagcatcgcaatgcccgtctgaagttccgtcgaaaatgggcctaaattc

aatttgacgcatttacccgcgaacaattgcgcgaaggctgtcaagtgtgttccacgaactgcgacaacaagcacacacacaaacac

20   aaatgttatcgtttcggcatgtttctcggtacaaagcgtgtggcgctatgtggcatgccgattcccagacagagtgatcgatagtaaa

tgtagcctatccggtagcattcaatttccttttctatcctcgcaaacaaagcccattctggggaggcgtggtgaagctttcaaaggcat

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tttgggattggttttgcagcgaaaaatcaaaacattcgcacaaaaccgtcctccatttcaaatgcctacacttgtcactgtatatctct

25   ctttctctcgttttgccacgttgcag*TCTCGTTTCAGCAATCGGAGATACGTACGGTCCTGCCCCTGCT*

GCTACACATGCTGACCTCCACCATCAAGCTGACGCTGCTCGCCTACCAGGCAACGAAA

ATCGACGGTGTCAACGTGTACGGATTGACCGTAATCGGATATTTGTGCTACGCGTTGG

*CTCAGGTTTTCCTGTTTTGCATCTTTGGCAATCGGCTCATCGAGGAG*gtacgtgcgctcggcgtg

ttgccgtgggaaagcattctccctgccccatatcgcttcattctcccagatcacacatttgcatcacaaagccagcacacttttgcttcg

30   ccgctgccatctcggcttctgaatgtttttcacttctcccatacttctcccgtgcag*AGCTCATCCGTGATGAAGGCGGC*

CTATTCCTGCCACTGGTACGACGGGTCCGAGGAGGCAAAAACCTTCGTCCAGATCGTT

TGTCAGCAGTGCCAGAAGGCGATGACTATTTCCGGAGCCAAGTTTTTCACCGTTTCGC

*TCGATCTGTTTGCTTCG*gtaagtgtagcctggtggctggcacagaacaggctggcaaaacagggactttggctctagc

ctgatgggtggtatatgtgtgtctattttttgctaccattctcgcatcccttcctttccag*GTTCTTGGAGCCGTTGTCAC*

35   *CTACTTCATGGTGCTGGTGCAGCTGAAGTAA*acagccgtggcccggaaggatgtgtttttttcgctcgttcg

gttgtttgtttgtgcacactttctcttggacattttctctactgcaaaggtttaacaaacagcaacaacaaataatcccaagttttcttttt

acagatctttgcaaaatgattagattttaatagattaacagtgcttgattatctgtcctgtagcaaccggggctgaagaacgttgatt

tggtaaaagtacaaaagggacgttggaaattgaaccaccagaagagtgatatttatgcaaagctcaccaagggaaatctatgtat

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40   tcgtttcggcgtttaaccgttgttgataatacacaaaagatgataaaaataaataataacaaaatgttaatatgagtaagtacta

aatagagaaatcgttttagtatgatcatacctccaatcatttgtttgaaattaactttaattttaactcaaattaaaccgatgttttact

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actgcagaaaagcttctttttttgctcgctttccgatggttggttggacgaagttggtaacaaacggcaagcaattagcataaactatt

45   ttcgcatcgagatggaaatgaatgtaccactagaaccgagtgaaatgaattactttttcaacttgcacgccaaaaccattatctaaag

tacgcacaacttaaaaacaaaccccaaattgtcgtccacccttcattccactttcttgctacactttccgaccgagttctgtagcgccag

cagcaaaaaaatacatataaaaccttcatcactcaagctgtatcgagccagcgtgggttgtgtttgactgtgctgtgaaagaaaga

agaaaaaaaaaacacttccacgggaagctagcaattggaaatgcataaattaaccggaagaaattcgcaaaaccccgcaccgac

gtaccgcaccgcatccgtaccgataccggaacaaacggtgtgcgcgaaagaatccgctagcagccccactggcacgggtatttgctt
ttggttctgtgtgtttttcttccactggtttgggtgcctgggcgaaggctagctcggctactttcccggggccgcaattttctgcagcccaag
gcggcgtgctcgtggggccaaaagaat

5

Figure 9 continued

Renumbered figure

Figure 1 *This original figure is cancelled.*

Anopheles gambiae arrestin 1 cDNA sequence (SEQ ID NO: 1)

5

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ACAGGAACGACGGTTGTGATCCCTCCACTGGTGGTGACACGAATCATAAGCATTATTTCATACCT
AAAAAACAAAATCTACAAAAAAAAGCTTCATTCCCATCGAAAAAACTTTCTTGTGAAATCAACCG
AGCTAACAAACAACATCCTGTGCAAAATCTAGCAGTGAAAGTGTGATATCGTATACCTGTACCTG
TAAACCGTTGTGCGCGTGTGTGCCTTTGTGTATCAATTTTGTGGAAAACAGAAAATACATCAAAA
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10
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TGGTTTACAATTTCAAAGTCTTCAAGAAGTGCGCCCCTAATGGAAAGGTTACGCTGTACATGGG
CAAGCGTGACTTTGTAGACCACGTTTCCGGCGTTGAACCGATCGATGGTATCGTCGTCCTCGAT
GATGAGTACATTCGTGACAACCGTAAGGTATTCGGTCAGATTGTCTGCAGTTTCCGCTACGGCC
GCGAAGAGGACGAGGTGATGGGACTAAACTTCCAGAAGGAGTTATGCCTCGCTTCCGAACAGAT
CTACCCGCGTCCGGAAAAGTCGGACAAGGAGCAGACCAAGCTCCAGGAGCGACTGCTGAAGAA
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15
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GCTGGGTTCGAACGCCATCCCGTTCACGTTCAACATCTCGCCGAATGCTCCGTCTTCGGTCACG
CTGCAGCAGGGCGAAGATGATAATGGAGACCCGTGCGGTGTGTCGTACTACGTGAAGATCTTTG
CCGGTGAGTCGGAAACCGATCGTACGCACCGTCGCAGCACCGTTACGCTCGGCATACGCAAGAT
CCAGTTCGCACCGACCAAGCAGGGCCAGCAGCCGTGCACGCTGGTGCGCAAGGACTTTATGCTA
AGCCCGGGAGAGCTGGAGCTCGAGGTCACACTAGACAAGCAGCTGTACCTGCACGGGGAGCGA
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20
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ATAGGCGTCAACATCTGCATCCGCAACAACTCGAACAAAATGGTCAAGAAGATTAAGGCCATGG
TCCAGCAGGGTGTGGATGTGGTGCTGTTCCAGAATGGTAGCTACCGCAACACAGTGGCATCGCT
GGAGACTAGCGAGGGTTGCCCAATTCAGCCCGGCTCCAGTCTGCAGAAGGTAATGTACCTCACG
CCGCTGCTGTCCTCGAACAAGCAGCGACGTGGCATCGCCCTGGACGGTCAGATCAAGCGTCAGG
ATCAGTGTTTGGCCTCGACAACCCTCTTGGCTCAACCGGATCAGCGAGATGCTTTCGGCGTTAT
```
25
```
CATATCGTATGCCGTAAAGGTTAAGCTTTTCCTCGGCGCACTCGGCGGCGAGCTGTCGGCGGAA
CTTCCATTTGTGCTGATGCACCCAAAGCCCGGCACCAAGGCTAAGGTCATCCATGCCGACAGCC
AGGCCGACGTAGAAACTTTCCGACAGGATACAATCGACCAGCAGGCATCAGTTGACTTTGAATA
GACGACGCAACGGTTTGGAAATGCTACCTACTACCCCAGGCATGGGCTAACACGACGAACGAAC
TACTACTACTAAGCATAAAAAACAGGAAAAAAAATGGAAACTTAAAAAATGGATCATACAACCG
```
30
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AACGCAAACGACCTACGACGATCGATCTCACTTCCCCGTCTTTTTCATCCTAAGCAATAGAACGA
TGGTAGAAAAGGAAGATAAAGATGGAGAGAAAGTCACGTGTATCAATGACGACGACTACCAAAA
CTGAAGACGTAACACATGTTCCCCAGCGAGCGGTAACTGTTCTGTTCTGACACCTTCCGCTCGA
CAATGTACCTTTTAAAAACATACAAATTAGAAGTCGTCTTCACTACCTTCAACCAATCCAGCCAC
TTTGGTATATACTTTTCATAGAATCCTTCTGAGCGCAAGGACCCTATTGAAATTCAGTGTTATTTT
```
35
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GTAACTGCGACCAAATGCCTAGCTGAATGTTGTTGAACGAGTTATGTACATCAAAAGATTGAATA
AAACAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
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x 15

Figure 2   *This original figure is cancelled.*

Anopheles gambiae arrestin 1 amino acid sequence (SEQ ID NO: 2)

5

MVYNFKVFKKCAPNGKVTLYMGKRDFVDHVSGVEPIDGIVVLDDEYIRDNRKVFGQIVCSFRYGR
EEDEVMGLNFQKELCLASEQIYPRPEKSDKEQTKLQERLLKKLGSNAIPFTFNISPNAPSSVTLQQG
EDDNGDPCGVSYYVKIFAGESETDRTHRRSTVTLGIRKIQFAPTKQGQQPCTLVRKDFMLSPGELE
LEVTLDKQLYLHGERIGVNICIRNNSNKMVKKIKAMVQQGVDVVLFQNGSYRNTVASLETSEGCPI

10 QPGSSLQKVMYLTPLLSSNKQRRGIALDGQIKRQDQCLASTTLLAQPDQRDAFGVIISYAVKVKLFL
GALGGELSAELPFVLMHPKPGTKAKVIHADSQADVETFRQDTIDQQASVDFE

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2 16

Figure 3b

This original figure is cancelled

Anopheles gambiae odorant receptor 1 amino acid sequence (SEQ ID NO: 4)

5

MKKDSFFKMLNKHRWILCLWPPEDTDQATRNRYIAYGWALRIMFLHLYALTQALYFKDVKDIND
IANALFVLMTQVTLIYKLEKFNYNIARIQACLRKLNCTLYHPKQREEFSPVLQSMSGVFWLMIFLM
FVAIFTIIMWVMSPAFDNERRLPVPAWFPVDYHHSDIVYGVLFLYQTIGIVMSATYNFSTDTMFSG
LMLHINGQIVRLGSMVKKLGHDVPPERQLVATDAEWKEMRKRIDHHSKVYGTMYAKVTECVLF
10 HKDILRIYLRASMRVCNYHLYDTAATTGGDVTMADLLGCGVYLLVKTSQVFIFCYVGNEISYTDKF
TEFVGFSNYFKFDKRTSQAMIFFLQMTLKDVHIKVGSVLKVTLNLHTFLQIMKLSYSYLAVLQSM
ESEZ

15

Figure 4b *This original figure is cancelled.*

Anopheles gambiae odorant receptor 2 amino acid sequence (SEQ ID NO: 6)

5

MLIEECPIIGVNVRVWLFWSYLRRPRLSRFLVGCIPVAVLNVFQFLKLYSSWGDMSELIINGYFTV
LYFNLVLRTSFLVINRRKFETFFEGVAAEYALLEKNDDIRPVLERYTRRGRMLSISNLWLGAFISA
CFVTYPLFVPGRGLPYGVTIPGVDVLATPTYQVVFVLQVYLTFPACCMYIPFTSFYATCTLFALVQI
AALKQRLGRLGRHSGTMASTGHSAGTLFAELKECLKYHKQIIQYVHDLNSLVTHLCLLEFLSFGM

10 MLCALLFLLSISNQLAQMIMIGSYIFMILSQMFAFYWHANEVLEASLGIGDAIYNGAWPDFEEPIR
KRLILIIARAQPTDGGKIKVGNVYPMTLEMFQKLLNVSYSYFTLLRRVYN

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18

Figure 5b

This original figure is cancelled

Anopheles gambiae odorant receptor 3 amino acid sequence (SEQ ID NO: 8)

5

MPSERLRLITSFGTPQDKRTMVLPKLKDETAVMPFLLQIQTIAGLWGDRSQRYRFYLIFSYFCAMV
VLPKVLFGYPDLEVAVRGTAELMFESNAFFGMLMFSFQRDNYERLVHQLQDLAALVLQDLPTEL
GEYLISVNRRVDRFSKIYCCCHFSMATFFWFMPVWTTYSAYFAVRNSTEPVEHVLHLEEELYFLN
IRTSMAHYTFYVAIMWPTIYTLGFTGGTKLLTIFSNVKYCSAMLKLVALRIHCLARVAQDRAEKEL

10

NEIISMHQRVLNCVFLLETTFRWVFFVQFIQCTMIWCSLILYIAVTGFSSTVANVCVQIILVTVETY
GYGYFGTDLTTEVLWSYGVALAIYDSEWYKFSISMRRKLRLLLQRSQKPLGVTAGKFRFVNVAQF
GKMLKMSYSFYVVLKEQF

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This original figure is cancelled.

Figure 6b

Anopheles gambiae odorant receptor 4 amino acid sequence (SEQ ID NO: 14)

5

MKFELFQKYSSPDTVLSFVLRLLHIVGMNGAGFRSRIRVGGIFLFYLIFLVIPPLTGGYTDGHQRVR
TSVEFLFNCNIYGGSMFFAYDVATFQAFIQELKSLSVLVCSHSYRLKYKLTRFNRRADIIAKVQTTC
MGAVTLFYWIAPIPSICAHYYRSTNSTEPVRFVQHLEVKFYWLENRTSVEDYITFVLIMLPVVVMC
10   GYVCNLKVMTICCSIGHCTLYTRMTIEMVEQLESMASAERTASAIRNVGQMHSGLLKCIRLLNTSI
RSMLMLQWLTCVLNWSISLIYLTNVGISLQSVTVVVMFFLATAETFLYCLLGTRLATQQQLLEHAL
YATRWYNYPIAFRSSIRMMLRQSQRHAHITVGKFFRVNLEEFSRIVNLSYSAYVVLKDVIKMDVQ
NVSYSYFTLLRRVYN

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Figure 9b

This original figure is cancelled

Anopheles gambiae odorant receptor 5 amino acid sequence (SEQ ID NO: 16)

5

MVLPKLSEPYAVMPLLLRLQRFVGLWGERRYRYKFRLAFLSFCLLVVIPKVAFGYPDLE
TMVRGTAELIFEWNVLFGMLLFSLKLDDYDDLVYRYKDISKIAFRKDVPSQMGDYLVRI
NHRIDRFSKIYCCSHLCLAIFYWVAPSSSTYLAYLGARNRSVPVEHVLHLEEELYWFHTR
VSLVDYSIFTAIMLPTIFMLAYFGGLKLLTIFSNVKYCSAMLRLVAMRIQFMDRLDEREA
10 EKELIEIIVMHQKALKCVELLEIIFRWVFLGQFIQCVMIWCSLVLYVAVTGLSTKAANVG
VLFILLTVETYGFCYFGSDLTSEASCYSLTRAAYGSLWYRRSVSIQRKLRMVLQRAQKP
VGISAGKFCFVDIEQFGNMAKTSYSFYIVLKDQF

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21

Figure 10b *This original figure is cancelled*

Anopheles gambiae odorant receptor 6 partial amino acid sequence
(SEQ ID NO: 18)

5

LCLPDVAIAHVLFRIRQCTLDGGGDDVCCAPFSARESDLFISCNILFLSRPHRRLDGYML
VKFVLFMLCFLIELLMLCAYGEDIVESPWGDZCRLRLRMVPGRVGGVPSIRAANYTPQP
AVRHTDRMENLAHPNEYFQSDPASFLVLLYPPEDRLRE

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This original figure is cancelled. (handwritten annotation)

Figure 11b

Anopheles gambiae odorant receptor 7 amino acid sequence (SEQ ID NO: 20)

5

MVLIQFFAILGNLATNADDVNELTANTITTLFFTHSVTKFIYFAVNSENFYRTLAIWNQT
NTHPLFAESDARYHSIALAKMRKLLVLVMATTVLSVVAWVTITFFGESVKTVLDKATN
ETYTVDIPRLPIKSWYPWNAMSGPAYIFSFIYQVRWRNGIMRSLMELSASLDTYRPNSSQ
LFRAISAGSKSELIINEEKDPDVKDFDLSGIYSSKADWGAQFRAPSTLQTFDENGRNGNP

10 NGLTRKQEMMVRSAIKYWVERHKHVVRLVSAIGDTYGPALLLHMLTSTIKLTLLAYQA
TKIDGVNVYGLTVIGYLCYALAQVFLFCIFGNRLIEESSSVMKAAYSCHWYDGSEEAKT
FVQIVCQQCQKAMTISGAKFFTVSLDLFASVLGAVVTYFMVLVQLK

15

23 (handwritten)